of Greek can be *begun*. There is the more reason for hope that the opinions of the conference will not again be ignored in practice, since the meeting further resolved, on the motion of Dr. Lyttelton, to appoint a committee to confer with the preparatory schoolmasters as to a scheme of studies for schoolboys from the age of nine until about sixteen.

A report presented to the Leicester meeting of the British Association contained recommendations which have been endorsed during the last fifteen months by various meetings of teachers. Without undue precipitancy or rash precision, the meeting decided, "That this conference, while withholding its assent to many details, and in particular to the proposal to postpone the study of Latin to the age of twelve, approves of the main conclusions of the report of the committee of the British Association Education section." It may be hoped that influential headmasters will find some means of translating this approval into action, especially the much-needed improvement of the position of teachers.

Several administrative problems were discussed. The Board of Education was asked to proceed at an early date with the registration of teachers, the suggestion being made that the Registration Council should include representatives of various types of schools. A resolution welcoming the inspection of non-local schools by the Board failed to pass, the previous question being voted by a small majority. Some headmasters desired inspection as a means of bringing the authorities of the schools into closer touch with the Board, in order that the great public schools might take their place in a coordinated system of national education. On the other side, fear was expressed lest compulsory inspection should make the headmaster responsible to two masters, the governors and the Board; any action was deprecated which would diminish or destroy the variety of type of the secondary schools of England. As opinion on this matter appears to be uncrystallised, we may hope that there may be a gradual growth in the number of schools which seek inspection by the Board on their individual initiative. The conference appointed committees to confer with (*a*) the Army Council, (*b*) the Oxford and Cambridge joint board. The neglect of German was deplored, and a resolution was carried in favour of dividing the emoluments of entrance scholarships so that the bulk of the money should be reserved to those in need of financial assistance.

Reviewing the deliberations of the conference as a whole, it can hardly be asserted that the need for far-reaching reform of the public-school curriculum has been sufficiently impressed upon headmasters. Reform of the common examination for entrance to public schools is a necessary preliminary. In its present organisation this examination discourages manual training, ignores the æsthetic side of education, and penalises nature-study and experimental science. The plain teaching of physiology concerning the development of the brain and of neuro-muscular systems receives contemptuous disregard. There is a widespread belief that the position attained by a boy on entry to the public school depends almost entirely on his knowledge of the rudiments of Latin and Greek. We do not know of how many schools this is true, but we are certain that proficiency in natural history or physics should be no bar to a boy's efforts to win a good position, and that no implication of intellectual inferiority should attach to the science side of the school. With great earnestness we urge the joint committee of the conference and the masters of preparatory schools to re-model the conditions of the entrance examination, so that young boys may pursue a broad general course, comprising literary, scientific, mathematical, artistic and manual training. The terms of reference assigned to the committee encourage us to hope for a curriculum containing the studies we have enumerated up to sixteen years of age. If schemes founded on such a basis were adopted by the schools, a partial specialisation during the last two years at school would be compatible with the aim which headmasters no less than their critics have in view, viz. to ensure that the majority of boys should receive during school-life a general education in harmony with the ideas and requirements of the present century.

G. F. D.

BIRDS IN RELATION TO AGRICULTURE.[1]

DURING the past few years birds have received an increased amount of attention, for it has become more generally recognised that the whole question of their food supply is of great importance to British agriculture—using this term in its widest sense. There are plenty of individuals who rightly recognise that many of our avian fauna are of much economic value, while there are also, unfortunately, a far greater number who thoughtlessly stigmatise the majority of birds—or at least birds of a certain class, *e.g.* owls—as useless and harmful. These less enlightened sons of the soil need showing that the majority of British birds are useful, but the showing is far from easy. It has been demonstrated over and over again that the sparrow, or "the avian rat," as Mr. Tegetmeier terms it, is entirely harmful; Yarrell has stated that the kestrel principally subsists on mice; a case is mentioned by Macgillivray in which food was brought to the nestlings by a pair of fly-catchers no fewer than 537 times in a day; and the writer has himself observed a single starling carry food to its young from a grass paddock 18 times in 15 minutes; and hundreds of similar records have served to demonstrate in some sense that many birds are useful, and confer an immense benefit on mankind.

Although individual records are very valuable, they are not of the same importance as a coordinated and duplicated set of records, and the latter has been sorely needed. Mr. Robert Newstead has just made a most important contribution to our knowledge of the food of birds, his memoir on the subject being published as a supplement to the December issue of the *Journal of the Board of Agriculture*. As curator of the Grosvenor Museum, Chester, a large number of birds passed through Mr. Newstead's hands, and he was wise enough to tabulate carefully the contents of stomachs, &c. No special effort was made to collect material, and for this reason the records are, perhaps, the more valuable, since no selection of birds "caught red-handed" was made

Full notes were also made as to sex, locality, date, &c., and the records are based on 871 *post-mortem* examinations of the stomach contents and the "pellets" or "castings" of 128 species of birds. Field observations bring the records up to more than 1100. The contents of stomachs, "pellets," &c., are arranged under several heads, including insects, divided into beneficial and harmful in their respective orders; animals other than insects, *e.g.* slugs, birds, fish and other "small deer"; and vegetable food, which includes fruit, weed seeds, grain, &c. The birds themselves are finally divided, on the results of their partiality for given foods, into seven classes, from wholly innoxious and more or less strictly

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[1] "The Food of Some British Birds." By Robert Newstead. *Journal of the Board of Agriculture*, December supplement. (Board of Agriculture and Fisheries, 4 Whitehall Place, S.W.) Price 4*d*. post free.

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beneficial, through other grades to wholly destructive and useless species.

Coming now to the results, it is shown that insects were found in 41 per cent. of the total *post-mortem* records and pellets, while if certain birds—*e.g.* finches, owls, hawks, and water birds—are omitted "the insects forming the whole or part of the dietary of the remaining birds amount to between 70 and 75 per cent."

Large numbers of injurious insects were taken by all kinds of birds, click beetles and their larvæ (wireworms), weevils, crane flies and their larvæ (leather jackets), surface caterpillars and winter moth caterpillars being numerous; for example, five specimens of the rook contained between them 213 surface caterpillars, and 120 winter moth larvæ were found in a jay's stomach.

Grain occurred in about 77 cases, but in almost negligible quantities, and, except in the case of the blackbird and of fruit buds damaged by the bullfinch and blue titmouse, cultivated fruit was scarcely represented. Noxious weed seeds were taken by many birds.

Of the birds themselves, the majority come under the "useful" class; the song thrush, great and blue tits, greenfinch, chaffinch *and rook* have the balance of utility in their favour; the blackbird, bullfinch, sparrow-hawk and raven are destructive and doubtfully of any utility; while it is noteworthy that those species regarded as "wholly destructive and useless" number but three—the carrion crow, house sparrow and wood pigeon, the food of the two latter, however, not being considered.

Mr. Newstead's paper should be widely read, for it may certainly be held as a vindication of the bird world, and it is easy to understand the author's emphasis of the great value of the majority of birds. As hinted in the official preface, it is to be hoped that further reports will be forthcoming at a later date.

NOTES.

The most disastrous earthquake in Europe for many years was experienced in Calabria and the district of Messina, in Sicily, on Monday, December 28. The shock occurred at 5.20 a.m., and was followed by a great sea-wave, which appears to have destroyed Messina and Reggio, and also the greater part of the villages on each side of the Straits of Messina. Reports from Catanzaro state that the first intimation of the disturbance was a prolonged, thunderous noise followed by a vivid flash of lightning, and at the same time by a series of violent shocks which seemed interminable. Heavy torrential rain then fell, and continued to fall during Tuesday. According to reports from *Times* correspondents, so complete has been the destruction of Messina that it is almost impossible to obtain any connected account of the character of the earthquake. The centre of the disturbance seems to have been in the Straits, and it is greatly feared that the whole conformation of the neighbouring coast-line has been changed. On Tuesday, the officer of a torpedo-boat who left Messina for Reggio sent after a few hours the following message:—"I cannot find Reggio; if it exists, it is no longer where it was." The lighthouses in the Straits have been rendered useless by the earthquake, and it is rumoured that the configuration of the bottom of the Straits has been altered greatly. It is estimated that the number of deaths will reach the terrible total of 100,000, for in Messina alone 50,000 lives are said to have been lost. It will be recalled that the province of Calabria was visited with like disasters in September, 1905, and October, 1907.

A touch of real winter has set in over Great Britain since Christmas, and the closing days of December will be remembered for the heavy falls of snow and the severe frosts which have occurred. At Christmas a cold but dry easterly wind was blowing over the whole country, but on December 27 a shallow disturbance traversed the northern portion of the kingdom, and a fall of snow was generally experienced. The heaviest fall occurred in Scotland, but the amounts were fairly large over England, the fall being generally augmented on the following days, and much inconvenience was occasioned on our railways and to other traffic. The frost was exceptionally keen in all parts of Great Britain, and unusually low temperatures occurred in many places. The lowest thermometer readings were mostly experienced on the night of December 28 and on the following day. At Oxford the thermometer on the grass registered 14°, and at Greenwich a similar thermometer read 17° on the early morning of December 29. Much snow has fallen in London and the suburbs, and in St. James's Park, the observing station of the Meteorological Office, the sheltered thermometer stood at 22° at mid-day on December 29. The Greenwich records for the past sixty-eight years only show three instances of the highest day temperature below 25° in December; these occurred in 1855, 1874, and 1890, the lowest previous record being 23°·2, in 1855. Intense cold has occurred generally over western Europe, the minimum thermometer in the screen registering 3° at Berlin and 5° at Brussels on the night of December 28. This severe weather was accompanied by high easterly winds in many places.

We learn with deep regret of the death of Dr. J. M. Pernter, director of the Zentralanstalt für Meteorologie und Geodynamik in Vienna, and professor of terrestrial physics in the university there. Dr. Pernter died on December 20 at Arco, in South Tyrol, at sixty years of age.

The Weekly Weather Report just issued by the Meteorological Office gives a summary of the observations for the past year. The highest shade temperatures for the several districts range from 91° in the west of Scotland to 81° in the north of Scotland and in the north of Ireland. The lowest temperatures range from 10° in the east of Scotland and in the Midland counties to 19° in the north of Scotland and 24° in the English Channel. The mean temperature was not generally very different from the average, but there was mostly a slight excess. The number of rainy days ranged from 252 in the north of Scotland to 167 in the south-east of England, and they were mostly in fair agreement with the normal. The largest aggregate rainfall for the year was 51·14 inches, in the north of Scotland, which is 1·17 inches less than the average; the next largest measurement was 46·85 inches, in the west of Scotland. The largest total in the English districts was 36·36 inches, in the north-west, and the least 20·14 inches, in the north-east. The rainfall was nearly everywhere in defect of the average; in the south-west of England the deficiency was 6·93 inches. The duration of bright sunshine varied considerably in different parts of the kingdom, the largest amount being 1897 hours, in the English Channel district. In the south-east of England there was the greatest excess, the total duration being 1737 hours, which is 140 hours more than usual.

We regret to see the announcement of the death of Dr. George Gore, F.R.S., at eighty-two years of age.

According to a Reuter message, the newspapers of Burgos report that five meteoritic stones, weighing from

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